MOBOTIX

... the HiRes Video Company

MOBOTIX Product Announcement

S14 FlexMount Launch – 2012

S14D (Dual) & S14M (Mono)

www.mobotix.com.pl

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1. Product Overview

1.1. Introduction

The high-resolution S14 FlexMount is an easily concealable camera system for universal use. It features a powerful microprocessor that can transfer and record two sensor images simultaneously at highly detailed resolutions up to 6 megapixels.

The flat housing with integrated long-term flash memory and external connectors (network, MiniUSB, MxBus) is mounted discreetly behind a wall or ceiling panel. Ideal for hotels, restaurants, offices, retail, as well as assembly into devices such as ATMs.

S14D: World's First Double Hemispheric Camera

The S14D is equipped with two hemispheric sensor modules, each with a horizontal image angle of 180°. This permits monitoring of two entirely separate spaces – next to or on top of each other, indoors or outdoors – using just one camera. As the system comes with a day and night sensor, the S14D can be employed as a hemispheric day & night camera.

S14M: Mono Hemispheric Camera For Concealed Installation

The S14M comes with a built-in hemispheric sensor module (day or night). The housing can be installed out of sight, behind up to 6 mm thick wall/ceiling or stainless steel panels.

Main Advantages Of The S14 FlexMount

Double Hemispheric S14D Camera

When an S14D with two sensor modules is deployed, they can be installed in different mounting positions (ceiling, wall, floor), and even in different rooms, if needed. Each sensor module offers the full range of functions provided by a hemispheric camera. The day/night versions of the sensor modules can be freely combined in installation (including automatic day/night switching for the same viewing angle).

Double The Frame Rates Of The M12 DevKit

The modified hardware of the S14 not only provides significantly increased performance thanks to the use of the PXA320 XScale processor, but it also includes FPGA hardware that noticeably frees up the CPU.

Weatherproof Connections On Camera And Sensor Modules

Thanks to the IP65-weatherproof Ethernet, MxBus and MiniUSB ports on the camera housing, the network cable (patch or installation cable), MOBOTIX function modules and other devices can all be connected directly to the S14D or S14M. Like the camera itself, the S14D's sensor modules are weatherproofed according to IP65 and can withstand temperatures ranging from -30°C to +60°C (-22°F to +140°F). The integrated microphone enables recording of audio data and the two LEDs signal a range of operating and alarm states.

Up To 64 GB Of Internal Memory

The MicroSD card installed in the S14's camera housing has a capacity of 4 GB (max. 64 GB) and allows for decentralized storage and additional reliability.

Flexible And Futureproof

The system can easily be matched to suit the location's requirements, thanks to a range of available sensor modules (S14D only). Replacing the sensor modules at a later stage to change the focal lengths (coming soon) is quick and easy, as is upgrading from one to two sensor modules.

1.2. Advantages Of The S14D Compared With The M12 DevKit

S14 USPs:	What we are communicating:
• The S14 stands out in the market	• A world first from MOBOTIX
• Small, flat and elegant	• MOBOTIX has once again set new standards
• Sensors offer great flexibility for mounting 2 x 2m	• Top-level innovation
• Double hemispheric	
• Powerful (2 x 3,1 megapixels)	
• Decentralized (microSD card)	
• More camera for less money	
• More cost-efficient tender offers	

The high-resolution S14D FlexMount is not just a universally deployable, highly innovative and easily concealable camera system. Featuring a faster microprocessor and updated system platform, it also replaces the existing M12

DevKit including MxLink. The result is more than twice the processing power, which enables smooth video frame rates - even during the simultaneous transfer of two sensor images.

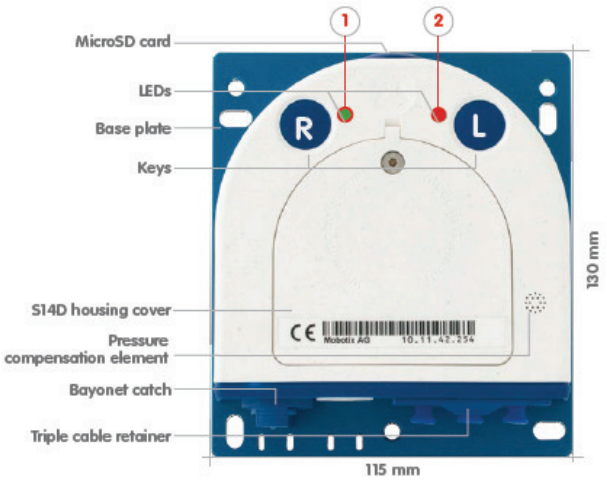
Note on Door Station Functionality

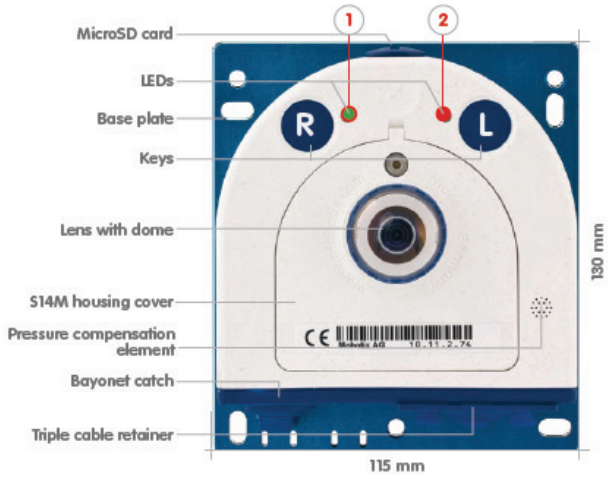
After updating to a future software version, the S14 can be used instead of a door station (by connecting the KeypadRFID and DoorMaster modules to **MxBus**).

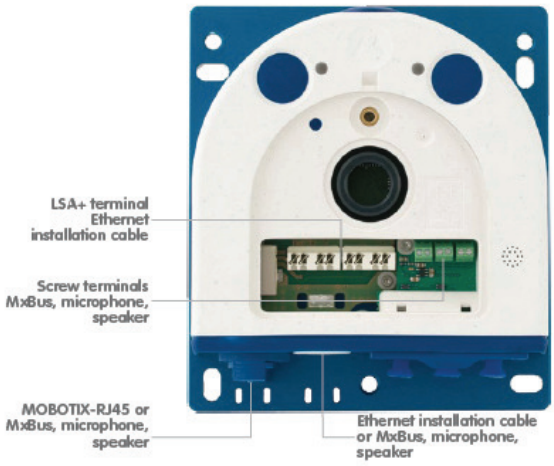
New	Comment
Sensor modules including lens and image sensor	Up to two can be connected, simultaneous display and recording, not compatible with M12-DevKit
Audio	S14D sensor modules provide an integrated microphone. Additional connections for microphone and speaker are provided on the S14 housing
MicroSD card	Replaces SD card and R models of the M12-DevKit
MiniUSB	Adapter cable available from MOBOTIX
MxBus	Enables connection of numerous extensions (MX-GPS-Box, ExtIO, CamIO, etc.)
Power supply	Via a blue NPA-PoE-Set, MX-NPA-Box or standard PoE switch
Ethernet connection	Directly to S14 via MOBOTIX patch cable or installation cable to the integrated LSA terminal connector
Sub-D HD-15	Port can be used via MX-232-IO Box (MOBOTIX accessories)
Shock detector	Reports acts of vandalism, etc. to the S14 camera housing

1.3. Housings And Cable Connections

Camera Housing






LSA+ terminal Ethernet installation cable
Screw terminals MxBus, microphone, speaker
MOBOTIX-RJ45 or MxBus, microphone, speaker
Ethernet installation cable or MxBus, microphone, speaker

The MOBOTIX S14D (left) and S14M (right) consist of a housing, a housing cover and a base plate for attaching the camera.

The following cables can be used with the S14:

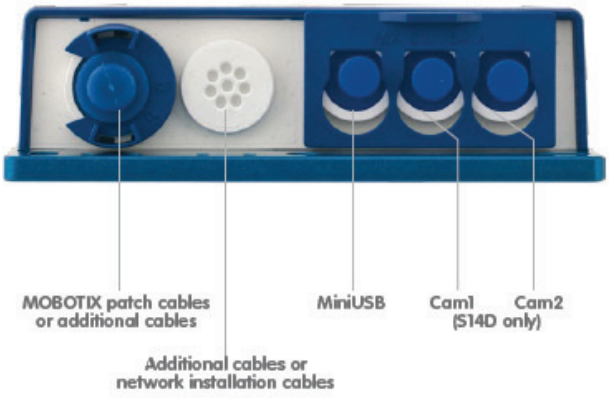
• **MOBOTIX patch cable**: This MOBOTIX cable included in the shipment is used to directly connect the system to the **MX-Patch-Box**,the **MX-NPA-Box,** or a standard network socket (only for inside use).

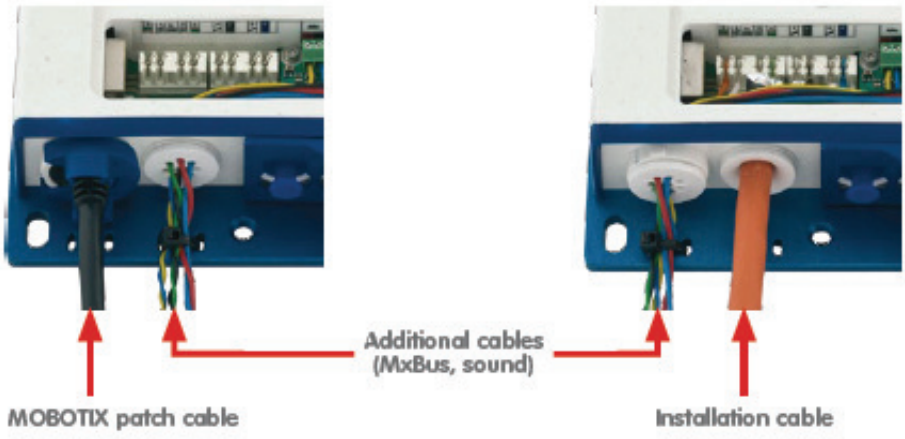
• **Ethernet installation cable**: As an alternative to the **MOBOTIX patch cable**, an Ethernet installation cable can also be fitted directly onto the integrated LSA cutting clamp.

• **MOBOTIX USB cable with MiniUSB connector**: This MOBOTIX cable provides the required impermeability, even in adverse weather conditions, and thus prevents corrosion of the connectors, such as for an external USB hard drive.

• **Sensor cable for the sensor modules (S14D only)**: The sensor modules are connected to the S14D via this cable. A separate cable is required for each sensor module (max. 2 m).For each cable, two hinged ferrites are mounted near the plug.

• **Additional cable for MxBus connections, microphone and speaker**: Additional MOBOTIX modules can be connected via this multi-wire cable. The other camera opening is used for this cable or for single wires, depending on which connection is used for network cabling (patch or installation cable).





Important:

For external connections always use the corresponding MOBOTIX cables with seal:

- Ethernet patch cable: **MX-OPT-CBL-LAN-1/2/5/10**
- Sensor cable: **MX-S14-OPT-CBL-2**
- MiniUSB cable (straight/straight): **MX-CBL-MU-STR-5**

2. Flexible Mounting Options

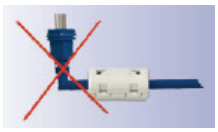
2.1. Introduction

The S14 FlexMount is designed for concealed installation in ceilings, walls, behind panels or in existing or specially manufactured housings. The independent sensor modules, each with a cable up to 2 m long, mean the S14D offers a lot of flexibility when it comes to selecting the installation location. The installation position of the sensor modules is crucial here. The camera module itself can then be installed in an appropriate place on the wall or ceiling (taking the maximum cable length to the sensor modules into account).

Please take note:

1. The S14D sensor modules must always be mounted so as to avoid the constant accumulation or collection of water or any other liquid around the cable connection on the back of the housing. Unless prevented, this could lead to a build-up of condensation inside the sensor module and its subsequent failure.
2. The text **MOBOTIX** at the front of the sensor module must point upwards after installation (corresponds to "top" of the camera image).

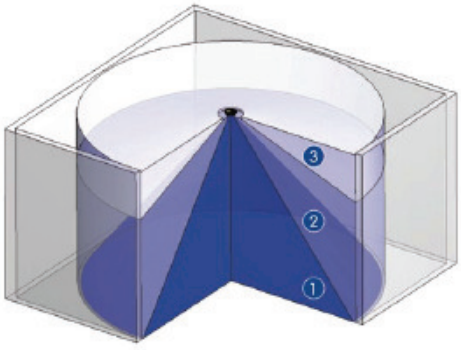
3. The hinged ferrites must be connected to the sensor cables of the S14D (two for each cable, max. 10 cm distance to the plug).
4. Sensor cables must not be bent.



5. Unused connectors on the housing of the S14 must always be sealed using the preinstalled plugs as well as the corresponding retainers.
6. Only original MOBOTIX cables should be used to connect the sensor modules, patch cables and USB cables in order to guarantee weather resistance according to IP65. The plugs supplied must be used if additional cables are required (MxBus, audio).
7. The lower (blue) part of the camera housing must face downwards so that any water running off the housing cannot accumulate around the connectors.

Positioning a hemispheric camera:

A hemispheric camera is primarily suited to providing an excellent overview, and less suitable if precise details are required. Due to its inherent physical and optical properties, the precision of the lens decreases as the distance from the lens grows. This means that the maximum usable image area greatly varies with the purpose of the camera. People, for example, may be identified very well at distances of up to 1.5 m, and with sufficient detail at up to 3 m. Objects can be recognized even at distances well beyond 5 m from the camera.



The **image quality** (precision) diminishes as the distance of an object to the camera focus point increases: 1 very good, 2 good, 3 satisfactory

2.2. S14D FlexMount Installation Options

Using One Or Two Sensor Modules

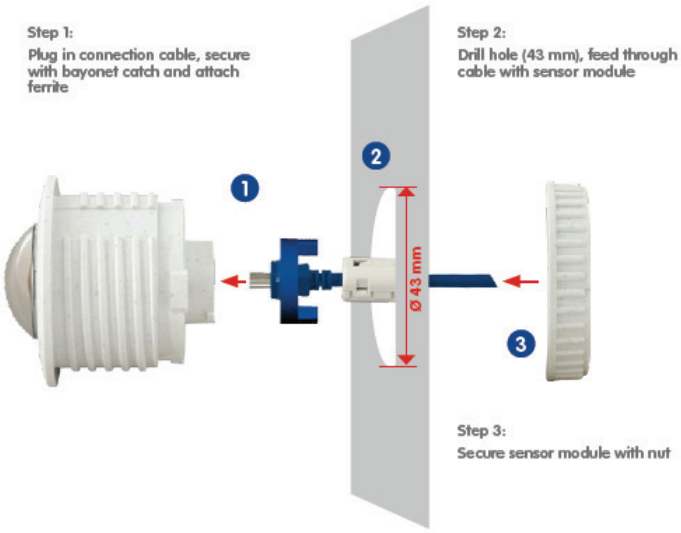
You can decide for yourself with the S14D whether you want to use the camera with one or two sensor modules. You can also upgrade or downgrade the system at any time. The S14D with a single hemispheric L11 sensor module therefore essentially offers the same range of functions as a standard hemispheric camera like the Q24M, but has the added advantage that it can be installed even more inconspicuously and can be almost completely hidden. While the sensor modules can record audio data via integrated microphones, an external speaker can be connected directly to the camera and positioned in an appropriate place. If the sensor module microphones are not used, an additional microphone can also be connected directly to the camera.

Hemispheric Day And Night Camera (S14D With Sensor Modules D11 And N11)

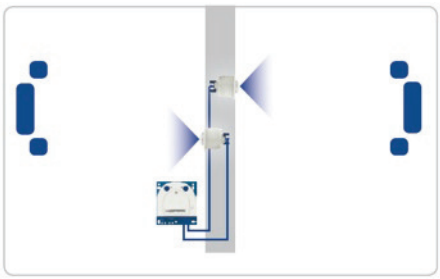
The S14D is the first hemispheric dual camera for use in extremely variable lighting conditions, equipped with two L11 lenses each with a black/white and color sensor. Regardless of whether the camera is mounted on a wall or a ceiling, it is very important that both the camera's sensor modules are positioned directly next to each other and in parallel (arrows on sensor modules pointing in the same direction) in order to see the same image area as a color image during the day and as a black/white image at night.

Ceiling Installation

Indoor installation takes place mostly on suspended ceilings and is extremely easy. A round hole with a diameter of 43 mm is all that is needed: The SD14D sensor module with connection cable is pushed through the ceiling panel from below, fixed from behind using a nut and a locknut, and then connected to the camera housing concealed behind a ceiling panel (connector and lock). It should be ensured when selecting installation sites that each of the sensor cables does not exceed two meters. This means that the maximum distance between the two sensor modules of an S14D is four meters when the camera housing is placed in the center.

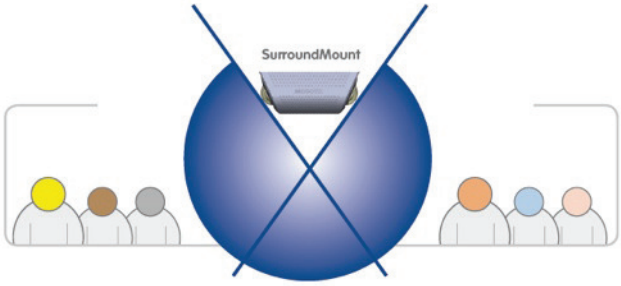


Two adjacent areas separated by a dividing wall, shelves, floor or other form of screen can be captured with no blind spots using an S14D.



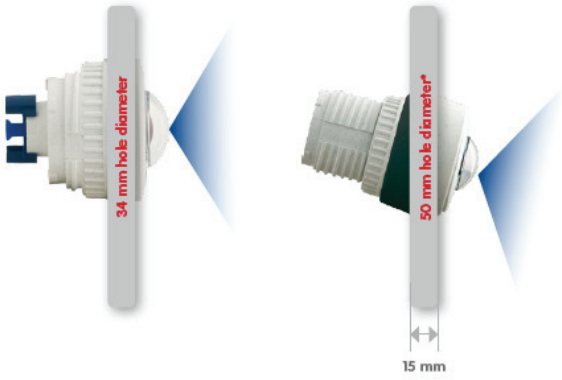
In L-shaped rooms, both sensor modules are simply positioned at right angles, allowing the S14D to capture the entire room with no blind spots.

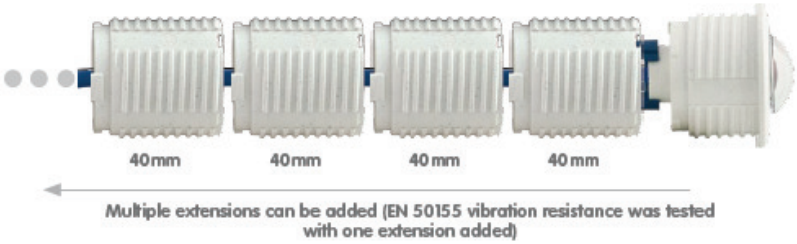
Installing the two sensor modules next to one another but pointing in opposite directions, which is suitable for particularly long, narrow rooms, delivers double hemispheric images of up to 6 megapixels. In terms of sharpness and detail, this significantly outperforms the results of a single hemispheric camera with just one lens. MOBOTIX will soon be offering a suitable mount in the S14 range of accessory products (SurroundMount). The tilt of the two sensor modules allows the area directly underneath them to be captured with no blind spots.



Wall Installation

Mounting an S14D sensor module on a wall, such as on basic partition walls or fake walls with cavities behind the wall covering (minimum thickness of 15 mm), is just as easy as mounting on a ceiling. Drill a 43 mm diameter hole, insert the sensor module, fix from behind with a locknut, and connect to the camera housing. Depending on the installation height and the required camera focus, the camera can be installed with or without the optional 15° tilting wedge. Depending on the thickness of the material, the diameter of the hole needs to be adjusted for tilted assembly using a wedge (see the corresponding table in the manual).





Multiple extensions can be added (EN 50155 vibration resistance was tested with one extension added)

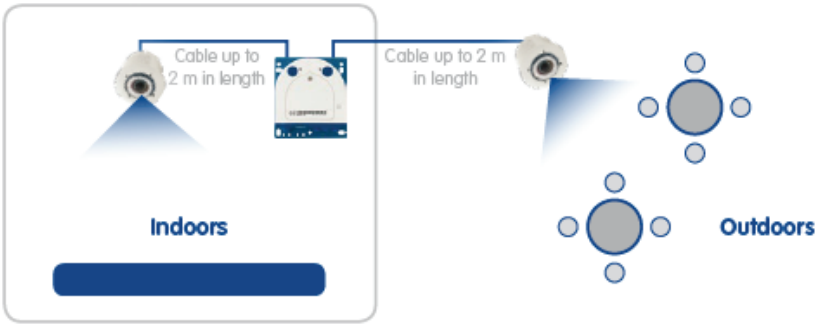
Longer "tunnel holes" through a wall can be bridged using several extension pieces (each approx. 40 mm). The maximum wall thickness is therefore only limited by the length of the sensor cable in relation to the installation position of the camera housing, which in theory is two meters.

Mixed Ceiling And Wall Installation

By mounting a sensor module on the ceiling of a room and at the same time attaching the second sensor module to an outside wall of this room, both the inside and the outside area can be captured with a single S14D at minimal installation cost.

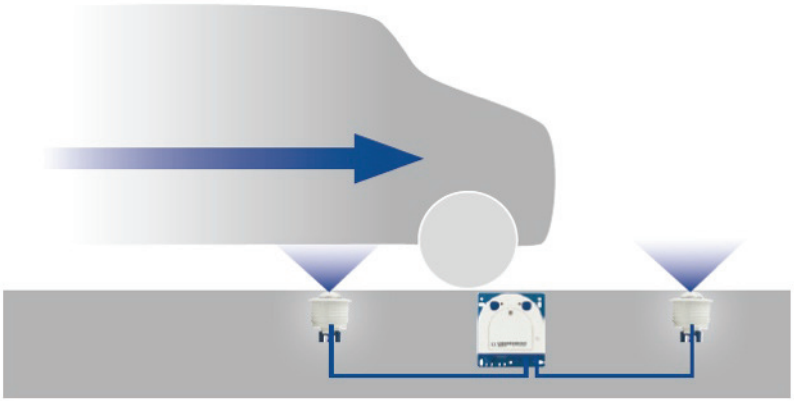
For example: Kiosk

Simultaneous capture of the entire sales floor and the area outside the entrance with stand-up tables.



Floor Installation

Mounting sensor modules on the floor can also make sense for industrial uses or in areas where there are no people. Example applications include vehicle ramps where the vehicles can be easily captured from below.



Place sensor modules centrally between the wheels (along vehicle longitudinal axis). Sensor modules must be protected against dirt at the top by glass panels or similar.

2.3. S14M FlexMount Installation Options

Unlike the S14D, the S14M has just one lens, which does not have a flexible sensor cable; instead, it is directly connected to the camera housing. However, compared with conventional mono cameras, the S14M has a special trick up its sleeve: The camera housing can be mounted out of view behind a wall up to 6.4 mm thick (wood paneling, stainless steel panel, etc.) with a round opening measuring 34 mm. The S14M can simply be fixed behind the wall, which will only leave the lens visible.

This allows the following installation options:

- Wall- or ceiling-mounting behind correspondingly thin or countersunk panels/cover plates.
- Individual mounting solutions such as installation in equipment, paneling, air ducts, mail boxes, homemade mounts, etc.

3. S14D And S14M: Technical Specifications

3.1. Lens Options

- **All** S14 models are shipped with **L11 Fisheye Lenses and Dome**
- Lenses L22 ... L135 will soon be available for the S14D
- The S14M generally only comes with an L11 lens
- S14D sensor modules can be freely replaced
- Sensor modules L22 through L135 provide a non-reflective protection layer made of **tempered Glass**

3.2. Features

	MX-S14M-SEC-D11	MX-S14M-SEC-NGHT-N11	MX-S14D-SEC
Hardware Features S14 FlexMount			
Outdoor weatherproof	IP65	IP65	IP65
Ethernet/MiniUSB/MxBus/MicroSD	X	X	X
MicroSD slot (internal DVR, max. 64 GB)	X	X	X
Image sensors	Color	BW	2x color/ 2x BW
Lenses	L11	L11	L11
Resolution (per sensor)	3MEGA[1]	1MEGA[1]	3/1MEGA[1]
Resolution horizontal x vertical (per sensor)	2048 × 1536	1280 × 960	2048 × 1536, 1280 × 960
Max. frame rate (fps) CIF/VGA/MEGA/3MEGA	30/30/30/20	30/30/30/20	30/30/30/20
Sensitivity of color sensor at 1/60 second (lux)	1	–	1
Sensitivity of BW sensor at 1/60 second (lux)	0.1	0.1	0.1
Sensitivity of color sensor at 1 second (lux)	0.05	–	0.05
Sensitivity of BW sensor at 1 second (lux)	0.005	0.005	0.005
Automatic night mode switch for color/BW	–	–	X
RAM storage (MB)	128	128	128
Temp. video storage (MB), ring buffer	64	64	64
Internal DVR (MicroSD), ring buffer	up to 64 GB[2]	up to 64 GB[2]	up to 64 GB[2]
• CIF images (64 GB int. DVR), approx.	4 million[3]	4 million[3]	4 million[3]
• VGA images (64 GB int. DVR), approx.	2 million[3]	2 million[3]	2 million[3]
• MEGA images (64 GB int. DVR), approx.	700,000[4]	700,000[4]	700,000[4]
• 3MEGA images (64 GB int. DVR), approx.	320,000[4]	320,000[4]	320,000[4]
Microphone and speaker (external connection)	X	X	X
Microphone integrated into sensor modules	–	X	X
Shock detector	X	X	X
Warranty (months)	24	24	24
Concealed installation	X	X	X
Special software features S14			
Dual image display	–	–	X
Dual image storage	–	–	X

3.3. Technical Specifications

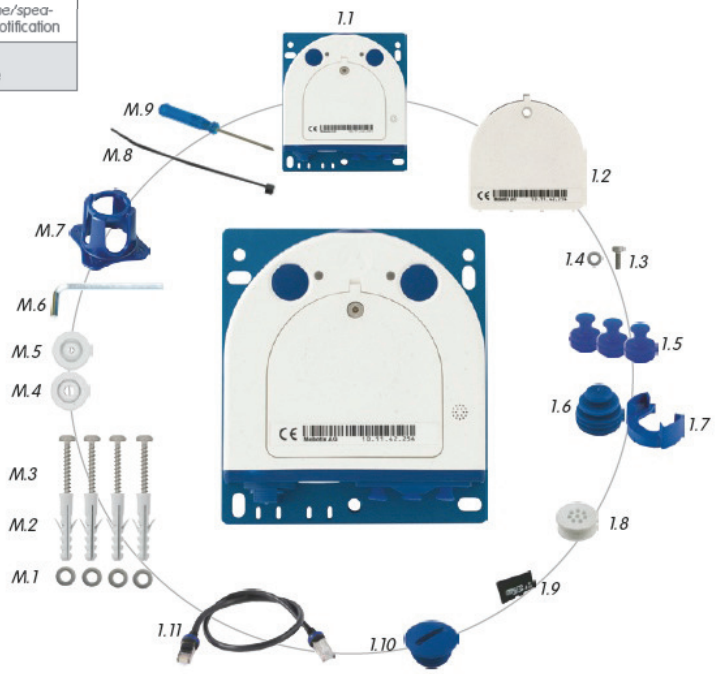
Technical data S14 FlexMount	
Model versions	MX-S14M-SEC (day), MX-S14M-SEC-NIGHT (night), MX-S14D-SEC (all combinations of day/night sensor modules)
Lens options	11 mm (on 35 mm equiv.), horizontal image angle: 180°
Sensitivity	Color sensor: 1 lux (t = 1/60 s), 0.05 lux (t = 1/1 s) Black-and-white sensor: 0.1 lux (t = 1/60 s), 0.005 lux (t = 1/1 s)
Image sensor S14M/S14D (in sensor module)	1/2" CMOS, progressive scan
Max. image resolution (dual image)	Color, Color: 4096 × 1536 (6.2MEGA) Color, Black-and-white: 2048 x 1536, 1280 × 960 (4.3MEGA) Black-and-white, Black-and-white: 2560 × 960 (2.5MEGA)
Image format (per sensor)	User choice of image format, for example, 2048 × 1536 (3MEGA), 1280 × 960 (MEGA), 1024 x768, 800 × 600, 768 × 576 (D1-PAL), 704 × 576 (TV-PAL), 640 × 480, 384 × 288, 320 × 240, 160 × 120
Max. frame rate M-JPEG (live/recording)	VGA: 30 fps, MEGA: 10 fps, 3MEGA: 4 fps, 6MEGA: 2 fps
Max. video rate MxPEG(live/recording/audio)	VGA: 30 fps, MEGA: 30 fps, 3MEGA: 20 fps, 6MEGA: 8 fps
Image compression	MxPEG, M-JPEG, JPEG, H.264 (for SIP video only)
Internal DVR	MicroSD slot including 4 GB, max. 64 GB
External video ring buffer	Directly on NAS and PC/server without additional recording software
Software (included)	MxEasy video management software, MxControlCenter control room software
Image processing	Backlight compensation, automatic white balance, image distortion correction, video sensor (motion detection)
Virtual PTZ	Digital pan/tilt/zoom, continuous 8× zoom
Alarm/events	Triggered by motion detection, external signals, temperature sensor, microphone, shock detector, notification via e-mail, FTP, IP telephony (VoIP, SIP), visual/acoustic alarms, pre- and post-alarm images
Audio	Microphone in sensor module (S14D only, S14M via ext. microphone), lip-synchronous audio, two-way communication, audio recording, ext. speaker can be connected directly
Interfaces	10/100 Ethernet, MiniUSB, MxBus; signal inputs/outputs and RS232 via accessories
Video telephony	VoIP/SIP, two-way communication (with ext. microphone/speaker, not included), remote control via key code, event notification
Security	User/group management, HTTPS/SSL, IP address filter, IEEE 802.1x, intrusion detection, digital image signature

Technical data S14 FlexMount	
Certification	EMV (EN 55022, CISPR 22, EN 55024, EN 61000-6-1+2, FCC Part 15B, AS/NZS3548), EN 50121-4, EN 50155
Power supply	Year-round Power-over-Ethernet (IEEE 802.3af/t); PoE class variable (class 2 set by default), approx. 4.5 W
Operating conditions	IP65, –30°C to +60°C (–22°F to 140°F)
Dimensions/weight S14M	W x H x D: 115 x 130 x 39.4 mm (installation dimensions); weight: approx. 457 g (including lens)
Dimensions/weight S14D	W x H x D: 115 x 130 x 33 mm; weight: approx. 444 g (without sensor modules, see below)
Dimensions/weight Sensor module L11	Diam. x H: 50 x 33.4 mm (installation dimensions; weight approx. 91 g (including lens); available colors: white and black
Weight of 2 m connection cable	Approx. 68 g
Standard delivery	Housing (high-resistance composite, PBT), white, shock-resistant dome (transparent), mounting parts, Allen wrench, 50 cm patch cable, manual, software, 4 GB MicroSD card (built-in)

Note on Door Station Functionality

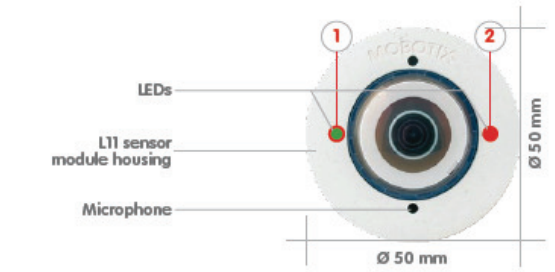
After updating to a future software version, the S14 can be used instead of a door station (by connecting the KeypadRFID and DoorMaster modules to **MxBus**).

3.4. S14D Scope Of Delivery

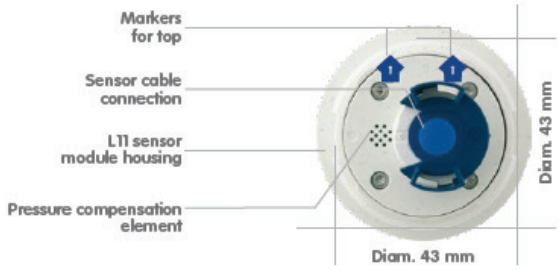


3.5. L11 Sensor Module Scope Of Delivery

Front View Of Sensor Module



Rear View Of Sensor Module



3.6. S14M Scope Of Delivery

4. MSRP And Overview Of Products/Order Numbers

Product	Partnumber	Order Number	EAN
S14M	S14M FlexMount Day	MX-S14M-Sec-D11	4047438015981
	S14M FlexMount Night	MX-S14M-Sec-Night- N11	4047438016490
S14D	S14D FlexMount Core	MX-S14D-Sec	4047438015998
S14D FlexMount Sensor	S14D Day -L11-PW	MX-SM-D11-PW	4047438016001
	S14D Day -L22-PW	MX-SM-D22-PW	4047438016025
	S14D Day -L32-PW	MX-SM-D32-PW	4047438016049
	S14D Day -L43-PW	MX-SM-D43-PW	4047438016063
	S14D Day -L65-PW	MX-SM-D65-PW	4047438016087
	S14D Day -L135-PW	MX-SM-D135-PW	4047438016100
	S14D Night -L11-PW	MX-SM-N11-PW	4047438016018
	S14D Night -L22-PW	MX-SM-N22-PW	4047438016032
	S14D Night -L32-PW	MX-SM-N32-PW	4047438016056
	S14D Night -L43-PW	MX-SM-N43-PW	4047438016070
	S14D Night -L65-PW	MX-SM-N65-PW	4047438016094
	S14D Night -L135-PW	MX-SM-N135-PW	4047438016117
	S14D Day -L11-BL	MX-SM-D11-BL	4047438016247
	S14D Day -L22-BL	MX-SM-D22-BL	4047438016261
	S14D Day -L32-BL	MX-SM-D32-BL	4047438016285
	S14D Day -L43-BL	MX-SM-D43-BL	4047438016308
	S14D Day -L65-BL	MX-SM-D65-BL	4047438016322
	S14D Day -L135-BL	MX-SM-D135-BL	4047438016346
	S14D Night -L11-BL	MX-SM-N11-BL	4047438016254
	S14D Night -L22-BL	MX-SM-N22-BL	4047438016278
	S14D Night -L32-BL	MX-SM-N32-BL	4047438016292
	S14D Night -L43-BL	MX-SM-N43-BL	4047438016315
	S14D Night -L65-BL	MX-SM-N65-BL	4047438016339
	S14D Night -L135-BL	MX-SM-N135-BL	4047438016353

Accessories			
	S14D Sensorcable 2m	MX-S14-OPT-CBL-2	4047438016438
	S14D SurroundMount		
	40 mm extension for S14D sensor	MX-S14-OPT-MK-EX	4047438016391
	S14 USB-Cable	MX-CBL-MU-STR-5	4047438016445
	S14D ceiling/wall mounting kit	MX-S14-OPT-MK-CW	4047438016384
	Replacement dome, hemispheric	MX-OPT-DK-L11	4047438016469
S14D Set 1	Camera housing with L11 daylight sensor module, incl. 2 m sensor cable, 15° wedges and 40 mm sensor extension, color: white, 1 Replacement dome, hemispheric	MX-S14D-Set1	4047438016476
S14D Set 2	Camera housing with two L11 daylight sensor modules, incl. 2 m sensor cables, 15° wedges and 40 mm sensor extensions, color: white, 2 Replacement domes, hemispheric	MX-S14D-Set2	4047438016483
S14D Set 3	Camera housing with one L11 dayl and one night sensor modules, incl. 2 m sensor cables, 15° wedges and 40 mm sensor extensions, color: white, 2 Replacement domes, hemispheric	MX-S14D-Set3	4047438017091

5. Target Markets

Hotels (lobby and hallways)

Banks (banking hall and ATMs)

Healthcare establishments

Museums and exhibitions

Shops and sales areas

Apartments (lobby)

Commercial buildings (office, workshop, production hall, parking lot, warehouse, ...)

6. Product@Web

S14 product information:

www.mobotix.com > Products > S14

S14 User Manual:

www.mobotix.com > Support > Manuals